

## **Identifying and Predicting Different Offending Trajectories among Poor Children**

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### Statement of the Research Problem

A majority of children in the United States engage in some forms of offending before passing out of their teenage years (Elliott, Huizinga, & Ageton, 1985). However, for most youth, antisocial acts are rather minor and infrequent, and engagement in offending is of fairly short duration. On the other hand, a very small proportion of the adolescent population, 5 to 10 percent, is estimated to account for over half of all juvenile offenses (Wolfgang, 1983) and the majority of all serious crimes (Office of Juvenile Justice and Delinquency Prevention, 1993).

For the most serious and chronic offenders, there appears to be continuity in offending that begins very early in life and extends through adolescence and early adulthood (Elliott, 1994; Loeber, 1990; Loeber & Hay, 1997; Moffitt, 1993). Poor children are over-represented in the early onset group (Brooks-Gunn, 1995; Brooks-Gunn & Furstenberg Jr., 1989; Duncan, Brooks-Gunn, & Klebanov, 1994; Huston, 1991). However, among poor children, what factors predict who will become serious and chronic offenders and who will not?

### Research Questions

Poverty predisposes children to a range of environmental hazards and is a predictor of negative child developmental outcomes such as low academic achievement, substance abuse, and early offenses (Chase-Lansdale & Brooks-Gunn, 1995; Huston, 1991). However, there are substantial individual differences among poor children in their resilience and vulnerability to the same risk--poverty (Jessor, 1993; Huston, 1991). More research is needed to understand individual differences of children in response to the contexts of poverty.

The purpose of this study is two-fold. First, this study identifies distinctive subgroups among poor children, distinguished by differently shaped trajectories in and out of offending. Analyses are carried out using semi-parametric group-based modeling (Nagin & Land, 1993; Nagin, 1999). Second, this study applies multinomial logistic regressions to identify generic and group-specific risk and protective factors that

distinguish trajectory subgroups from one another. Not all risk factors necessarily covary with all offending trajectories. Some risk factors may be associated more closely with early onset of offending or with longtime progression (e.g., a 'life-course-persistent' group), and other risk factors may better explain the variance in late onset of offending or desistance of such behavior (e.g., a 'adolescence-limited' group).

### Methodology

This study involves a secondary analysis of data drawn from the Seattle Social Development Project (SSDP), a theory-driven, longitudinal panel study of 808 youth interviewed annually from 1985. Students and their families were recruited for longitudinal tracking in the fall of 1985. Eighteen Seattle public elementary schools were identified to over-represent urban, multi-ethnic, high crime and low income neighborhoods. The population of students from which the sample was drawn included all children in the fifth grade in the eighteen schools (N=1053). Of the population of 1053 students, 808 (76.7%) consented to participate in the longitudinal study and constitute the SSDP sample.

The SSDP has an ethnically diverse and gender-balanced sample. A substantial proportion of subjects was from low-income households. Forty-six percent of parents reported a maximum family income under \$20,000 per year in 1985, and approximately 52.4% of students (n=423) were from low-income families at some point in the fifth, sixth, or seventh grade, as evidenced by eligibility for the National School Lunch / School Breakfast Program. Forty-two percent of the sample reported only one parent present in the home in 1985. The present study examines a subsample of poor children (n=423) from this panel.

The subsample of 423 participants from low-income families examined here (participants in the National School Lunch / School Breakfast Program) consisted of nearly equal numbers of boys (n=205) and girls (n=218). Of these children from low-income families, 117 identified themselves as European-Americans (28%); African-Americans (35%) and Asian-Americans (27%) also made up substantial portions of the low-income subsample. The remaining students in the low-income subsample were Native-Americans (6%) or from other ethnic groups (4%). Data are drawn from eight waves of the SSDP, which correspond to assessments carried out when subjects were 10, 11, 12, 13, 14, 15, 16, and 18 years old.

### Results and Discussion

Semi-parametric group-based modeling analysis reported herein was designed to identify the existence of multiple distinctive offending trajectories. In this analysis, the dependent variable was the offense seriousness scale over the interval 0 to 3 at each age from 13 to 18. This scale reflects the weighting of each reported act according to its

seriousness. Subjects get a score that reflects the most serious offenses they commit at each age. This study identified five developmental trajectories of offending--Non Offender, Late Onsetter, Desister, Escalator, and Chronic. Figure 1 presents the observed mean offense seriousness scores at each age for each trajectory group. Individuals were assigned to the group that best conforms to their observed behavior. The group called the "Non Offender" group was comprised of individuals who never display offending to any substantial degree. This "Non Offender" group represented about 18.6% of the sample.

A second group, that comprised about 8.5% of the sample, was labeled "Late Onsetter" group. This group displayed no offending until 15 but after this, they gradually increased to low level of offending. A third group was labeled "Desister" group. Initially, they displayed low levels of offending but by age 18 they had largely desisted. The "Desister" group represented about 23.7% of the sample. A fourth group, comprising about 38.2% of the sample, was labeled "Escalator" group. This group started off scoring low on offending at age 13 but by age 18 scored far higher. Finally, a fifth group was labeled "Chronic" group. They group is defined in terms of dual criteria of childhood onset and a tendency to persist into late adolescence and early adult life. The size of this group is uncertain but Moffitt (1993, 1996) suggested that it probably applied to about 6% of the general population.

However, the size of this chronic trajectory group is larger than might be expected perhaps because the SSDP used a sampling strategy that over-represented students from high crime and low income neighborhoods. Second, the desister group has not previously been identified in Moffitt's or Patterson's theories. Members of a desister group can be overlooked by being labeled "an early starter" in studies that have assumed that early onset group members are persistent and chronic offenders.

Nevertheless, Nagin and Land (1993) and Fergusson, Horwood, and Nagin (in press) found the possibility of other offending trajectories--low rate chronics, low to moderate offenders respectively--in addition to three trajectories (non offenders, adolescence-limited offenders, life-course-persistent offenders) corresponding to trajectory groups identified by theories. Third, late onsetter group members share features of late starters and adolescence-limited offenders described by Patterson (Patterson et al., 1992) and Moffitt (1993) respectively.

This group is defined in terms of the dual criteria of adolescent onset and a lack of persistence into adult life. Because of the duration of the present study (during adolescence), I was unable (due to data censoring) to demonstrate that late onsetter groups showed a pattern of offending that was limited to adolescence. The late onsetter group may be heterogeneous. Some members of identified late onsetter groups may desist in the long run but others may continue to commit offending.

Given the categorical nature of trajectory group membership, multinomial logistic regression was used to examine the effects of a variety of predictor variables at ages 10-12 on offending trajectory group membership, between the ages of 13 and 18.

Trajectory group membership has five categories--non offender, late onsetter, desister, escalator, and chronic groups. There are 10 possible contrasts in this multinomial logistic regression. Among these contrasts, I focused on two substantively meaningful contrasts in terms of divergence--late onsetter versus non offender and escalator versus desister. According to Figure 1, late onsetter and non offender groups start out quite similar at ages 13-15. Late onsetter group shows increased offending at ages 16 and 18, while non offender group does not. Escalator and desister groups have similar starting points. One group de-escalates and desists while the other group escalates through age 18.

#### Offender versus Non Offender in the Poor Subsample

To get a general overview, logistic regressions were conducted to distinguish offenders from non offenders. A variety of predictors at ages 10-12 distinguishing offenders from non offenders were found in every domain among poor children. The findings among poor children replicated previous theories and research findings based on general population, even though poor children were at-risk population. The results were summarized in Table 1. Looking at simple dichotomy between offender and non offender gives a general overview but likely masks important differences among offenders.

#### Late Onsetter versus Non Offender in the Poor Subsample

As analyses became more specific, the number of significant variables was smaller. In individual domain, anxious/depressed temperament was marginally significant. In peer domain, antisocial peer involvement was significant in the poor subsample. In neighborhood domain, neighborhood kids in trouble and drug availability were significant.

#### Escalator versus Desister in the Poor Subsample

In family domain, family management was significant. In peer domain, all antisocial peer factors were significant. In neighborhood domain, neighborhood kids in trouble and drug availability were significant.

Table 1: Coefficients <sup>a</sup> for Univariate Multinomial Logit Models Predicting Offending Trajectory Subgroup Membership

	nder vs. Offender	Offe Non	Late Onsetter vs. Non Offender	Esca lator vs. Desister
<b>INDIVIDUAL</b>				
Refusal skills	8 *	3.79	2.649	0.77
Alcohol drinking	1 ***	1.85	0.902	0.39
Temperament				
Aggressive	6 ***	1.92	0.876	0.30
Anxious/Depressed	1 *	0.72	0.876 <sup>†</sup>	-
Attention problems	3 ***	1.44	0.768	0.12
<b>FAMILY</b>				
Family management	6	0.21	-0.115	0.59
Attachment to parents	4	0.28	-0.291	0.03
Family conflict	2 *	0.77	-0.826	0.24
Parents' proviolent attitudes	8 **	1.27	0.690	0.55
<b>PEER</b>				
Antisocial peer opportunities	9 **	1.34	-0.059	1.19
Antisocial peer involvement	8 ***	1.56	1.301 *	1.10
Antisocial peer bonding	4 *	0.89	-0.071	1.28
Prosocial peer opportunities	7	0.47	0.050	0.27
Prosocial peer involvement	4	0.33	-0.226	0.13
Prosocial peer bonding	5	0.46	-0.189	0.26
<b>SCHOOL</b>				
Low academic achievement	3 ***	1.17	0.329	0.38
Low school commitment	5 **	1.02	-0.146	-
School attachment	6 **	1.13	-0.026	0.27
<b>NEIGHBORHOOD</b>				
Neighborhood kids in trouble	7 **	0.79	0.732 <sup>†</sup>	0.61
Neighborhood attachment	2	0.22	-0.201	0.03
Drug availability	6 ***	2.73	1.695 *	0.93

<sup>†</sup> P < .10 \* P < .05 \*\* P < .01 \*\*\* P < .001 (two-tailed tests)  
a. Coefficients are log odds ratios.

### Utility for Social Work Practice

The ultimate goal in conducting research on offending is to determine how to intervene most effectively in the lives of those at the greatest risk of serious and chronic offending in order to prevent such offending before it begins. Therefore, a key question for the field of prevention is whether serious and chronic offenders can be identified prospectively. Knowledge of different offending trajectories can help early identification

of those children who are at high risk for later serious crime, because trajectories can specify what stage is likely to emerge next for those children who have gone through the early stages of known pathways into delinquency and adult criminality. Furthermore, knowledge of what accounts for distinctive offending trajectories can lead to identification of modifiable foci for providing poor children with effective early preventive intervention.

If there are distinctions in etiologies of different trajectory groups, interrupting the processes for one subgroup is likely to require different preventive interventions from those targeted at interrupting the processes for another subgroup. We should tailor intervention strategies to prevent offending that differs in their longitudinal behavioral patterns.

This study indicated that there were a variety of childhood factors between the ages of 10 to 12 predictive of adolescent offending trajectories among poor children. These findings provided guidance for prevention for delinquency and crime. First, results from this study clearly suggest that prevention efforts should begin early. The present results suggest that preventive interventions in the elementary grades could have a significant impact on adolescent offending trajectories.

Second, a variety of factors in neighborhood, school, peer, family, and individual domains distinguished offending trajectories in adolescence among poor children. These findings suggest that preventive interventions should incorporate multiple-component strategies that span across several domains of childhood. Third, several risk and protective factors were identified in distinguishing offenders from non offenders among poor children. It means that both risk and protective factors in childhood are important. Either an approach to decrease risk or an approach to increase protection cannot be successful in reducing adolescent offending. Both approaches can produce synergetic effects on prevention or reduction of offending.

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